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EXAMINER

KWON, JOHN

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DAVID P. QUIGLEY, PATRICK R. SHEA,
AARON S. QUINTON, DANA E. RICHARDSON, and
DOUG DOUP

Appeal 2010-005238
Application 10/603,528
Technology Center 3700

Before: CHARLES N. GREENHUT, WILLIAM V. SAINDON, and
MICHAEL C. ASTORINO, *Administrative Patent Judges*.

GREENHUT, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF CASE

Appellants appeal under 35 U.S.C. § 134 from a rejection of claims 35-43 and 45-52. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

The claims are directed to an internal combustion engine piston.

Claim 35, reproduced below, is illustrative of the claimed subject matter:

35. An apparatus, comprising:

a piston having a solid head, a skirt, a longitudinal centerline and a first end including an annular surface, said piston having a circumferential sidewall portion and a bottom wall portion defining a combustion bowl within said solid head at said first end with said annular surface extending thereround, said sidewall portion including a sharp edge at the intersection of said annular surface and a part of said sidewall portion extending substantially parallel to the centerline and a substantially rounded lip overhanging a portion of said combustion bowl and spaced axially from said sharp edge and an upwardly flared portion located between said sharp edge and said substantially rounded lip, said combustion bowl defined at said sharp edge is round and said rounded lip is closer to said centerline than said sharp edge is to said centerline, and wherein said sharp edge directs a fuel passing out of said combustion bowl away from said annular surface.

REFERENCES

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Hofmann	US 5,605,126	Feb. 25, 1997
Gaiser	US 6,539,910	Apr. 1, 2003

REJECTIONS

Claims 42, 43 and 45-49 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Ans. 4.

Claims 35-43 and 45-52 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Gaiser and Hoffmann. Ans. 4.

OPINION

The rejection of claims 42, 43 and 45-49 under 35 U.S.C. § 112, first paragraph, is reversed.

New or amended claims which introduce elements or limitations which are not supported by the as-filed disclosure violate the written description requirement. *See, e.g., In re Lukach*, 442 F.2d 967 (CCPA 1971). While there is no *in haec verba* requirement, newly added claim limitations must be supported in the specification through express, implicit, or inherent disclosure. The fundamental factual inquiry is whether the specification conveys with reasonable clarity to those skilled in the art that, as of the filing date sought, applicant was in possession of the invention as now claimed. *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563-4 (Fed. Cir. 1991).

In an appropriate situation, drawings may be used to provide descriptive support required by 35 U.S.C. § 112, first paragraph. *Vas-Cath Inc. v. Mahurkar*, 935 F.2d at 1565. However, as both the Examiner and Appellants recognize, unless otherwise stated, patent drawings typically do not define the precise proportions of the depicted elements. *See* Ans. 6 and App. Br. 8 discussing *In re Wright*, 569 F.2d 1124, 193 USPQ 332 (CCPA 1977). Where the drawings do not clearly and conclusively disclose subject

matter an applicant for a patent seeks to enter by amendment, and the specification is completely silent in this respect, the Patent Office is justified in denying the applicant's request as not complying with 35 U.S.C. §§ 112, 132. *See, e.g., In re Olson*, 212 F.2d 590 (CCPA 1954) (affirming a rejection based on improperly inserting the limitation "equally spaced"). However, where the figures conform to limitations introduced by amendment there is no such justification. *See, e.g., In re Heinle*, 342 F.2d 1001, 1007 (CCPA 1965) (reversing a rejection (of claims 3 and 6) based on inserting a limitation that one part was "approximately one-fourth" the size of another). Each case is fact-specific and highly dependent upon the construction given to the term in question. *See Vas-Cath Inc., Olson and Heinle, supra*.

In the case before us, the Specification, as originally filed, describes the relationship between the upstanding wall 62 on the outer section 60 of the piston head 54 combustion bowl 51 as "substantially parallel" to the longitudinal centerline X of the bowl. Spec. 7-8. While the Specification allows for some deviation from parallel, Figures 2 and 3 seem to depict a parallel relationship between these elements. This configuration appears to aid in directing the portion of the spray plume from the combustion bowl 51 up into the combustion chamber 24 in the general direction of arrow Y which also appears to be parallel the centerline X.

The Examiner contends that by omitting the word "substantially," the term "parallel" would not account for manufacturing tolerances. We cannot agree with the Examiner's claim interpretation. While it may be reasonable in the realm of mathematics, in the realm of manufacturing engine components, one of ordinary skill in the art would understand that the term "parallel" already allows for slight deviations due to the manufacturing

process. One of ordinary skill in the art would understand that prefacing the term with substantially allows for an even greater deviation than that. One of ordinary skill in this fairly predictable art would recognize that making upstanding wall 62 “parallel” to the bowl centerline X is one of a small number of ways to make it “substantially parallel” and would understand the drawings as showing this specific example. *Cf e.g., In re Smythe*, 480 F.2d 1376, 1383-6 (CCPA 1973) and *In re Wertheim*, 541 F.2d 257, 264-5 (CCPA 1976)) with *In re Ruschig*, 379 F.2d 990, 994-5 (CCPA 1967)(“Appellants are pointing to trees. We are looking for blaze marks which single out particular trees. We see none.”) Thus, the Specification conveys with reasonable clarity to those skilled in the art that applicant was in possession of the invention as now claimed. Accordingly, we cannot sustain the rejection under 35 U.S.C. § 112, first paragraph.

The rejection of claims 35-43 and 45-52 under 35 U.S.C. § 103(a) as being unpatentable over Gaiser and Hoffmann is reversed.

The examiner bears the initial burden of factually supporting any prima facie conclusion of obviousness. The key to supporting any prima facie conclusion of obviousness under 35 U.S.C. § 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Court in *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) noted that an analysis supporting a rejection under 35 U.S.C. § 103 should be made explicit. The Federal Circuit has stated that “rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *In re Kahn*,

441 F.3d 977, 988 (Fed. Cir. 2006), cited with approval in *KSR*, 550 U.S. at 418.

The Examiner found that Gaiser discloses the basic device of independent claims 35, 42 and 50. Ans. 4-5. The Examiner found that the only element lacking in Gaiser was the use of a solid head portion of the piston. Ans. 5. To account for this deficiency, the Examiner states “Hoffmann shows that the provision of a solid piston head is old and well known in the art. Since the prior art references art from the same field of endeavor, the purpose disclosed by Hoffmann would have been recognized in the pertinent art of Gaiser.” Ans. 5. While the requirement for a solid head, or one not having cooling passages, is present in claims 35 and 50, respectively, we do not find it in claim 42. The Examiner has not explained why Hoffmann’s disclosure is relevant to claim 42.

While Gaiser does disclose a piston having a combustion bowl (*see* Fig. 4), Gaiser provides only a minimal discussion of that structure. Col. 1, ll. 13-15. We agree with Appellants (App. Br. 10) that the primary, if not the sole, concern of Gaiser relates to the movement of cooling and lubrication oil within the piston head. Gaiser *passim*. Thus, the Examiner’s proposed modification aims to essentially destroy Gaiser’s device, and runs counter to Gaiser’s teachings. This is indicative that hindsight has improperly crept into the Examiner’s analysis. The fact that two references may be considered within the same field of endeavor does not demonstrate a reason for their combination. The Examiner references “the purpose disclosed by Hoffmann” as a reason for combining the teachings of the references as proposed by the Examiner. However, Hoffmann does not discuss any advantages or desirability of using a solid head arrangement. We must therefore conclude that the Examiner failed to articulate reasoning with

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rational underpinnings to support the legal conclusion of obviousness. Accordingly, we cannot sustain the rejection of claims 35 and 50 and of those claims depending therefrom.

The discussion in *In re Wright, supra* regarding dimensions is pertinent to the Examiner's rejection of claim 42 under 35 U.S.C. § 103(a). There is no indication in Gaiser that the drawings are to scale and there is no discussion of the part of the wall interpreted by the Examiner as "extending in a direction parallel with said centerline." If anything, Figures 3 and 4 of Gaiser seem to show that part of the wall is not parallel to the centerline. Thus, we cannot sustain the Examiner's rejection of claim 42, and of those claims depending therefrom, based on the Examiner's finding of Gaiser disclosing an "edge portion [] defined on a part of a wall of the combustion bowl extending in a direction parallel with said centerline." The Examiner does not offer any alternative reasoning to account for this deficiency. *Cf. In re Wright*, 569 F. 2d 1124, 1127-8.

DECISION

The Examiner's rejections of claims 35-43 and 45-52 are reversed.

REVERSED

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